KEY AND CHECKLIST TO THE GAMMARIDEAN AMPHIPODS OF KAIKOURA

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ABSTRACT

An illustrated key is provided to 63 of the 69 species of gammaridean amphipods known from the Kaikoura Peninsula. An annotated checklist of species from the area is given. Reference to recent figures, and notes on habitats and relative abundance in the Kaikoura area, and on distribution within New Zealand are also included.

INTRODUCTION

Keys to the marine flora and fauna of the Kaikoura area are necessary because of the teaching and research activities at the Edward Percival Field Station at Kaikoura. The gammaridean amphipods of New Zealand have become well known since the recent works of Hurley and Barnard, and presently exceed 170 described species. At least 69 species are known from the Kaikoura area, and these are included in the following key and checklist. The key and many of the illustrations have been adapted from Hurley (1954c, 1956, 1957b) and Barnard (1972).

A generalised amphipod (Fig. 2) shows the parts referred to in the key. In some cases it may be necessary to remove mouthparts (Fig. 2D-I); antennae, gnathopods, or peraeopods (Fig. 2A); uropods or telson (Fig. 2A-C), from the specimen for study under a compound microscope, but usually a dissecting microscope is adequate.

For each species, the checklist gives literature references, habitat and relative abundance for the Kaikoura area, and distribution within New Zealand.

KEY

SUBORDERS OF THE AMPHIPODA

1. Six free thoracic segments, abdomen greatly reduced, usually lacking large pleopods or uropods, head and segment bearing gnathopod 1 immovably coalesced, (Fig. 1A) ..... Caprellidea

   Seven free thoracic segments, abdomen well developed, normally with pleopods and uropods, head and thorax free 2

2. Head and eyes large and swollen, maxillipeds absent, (Fig. 1B) ..... Hyperiidea

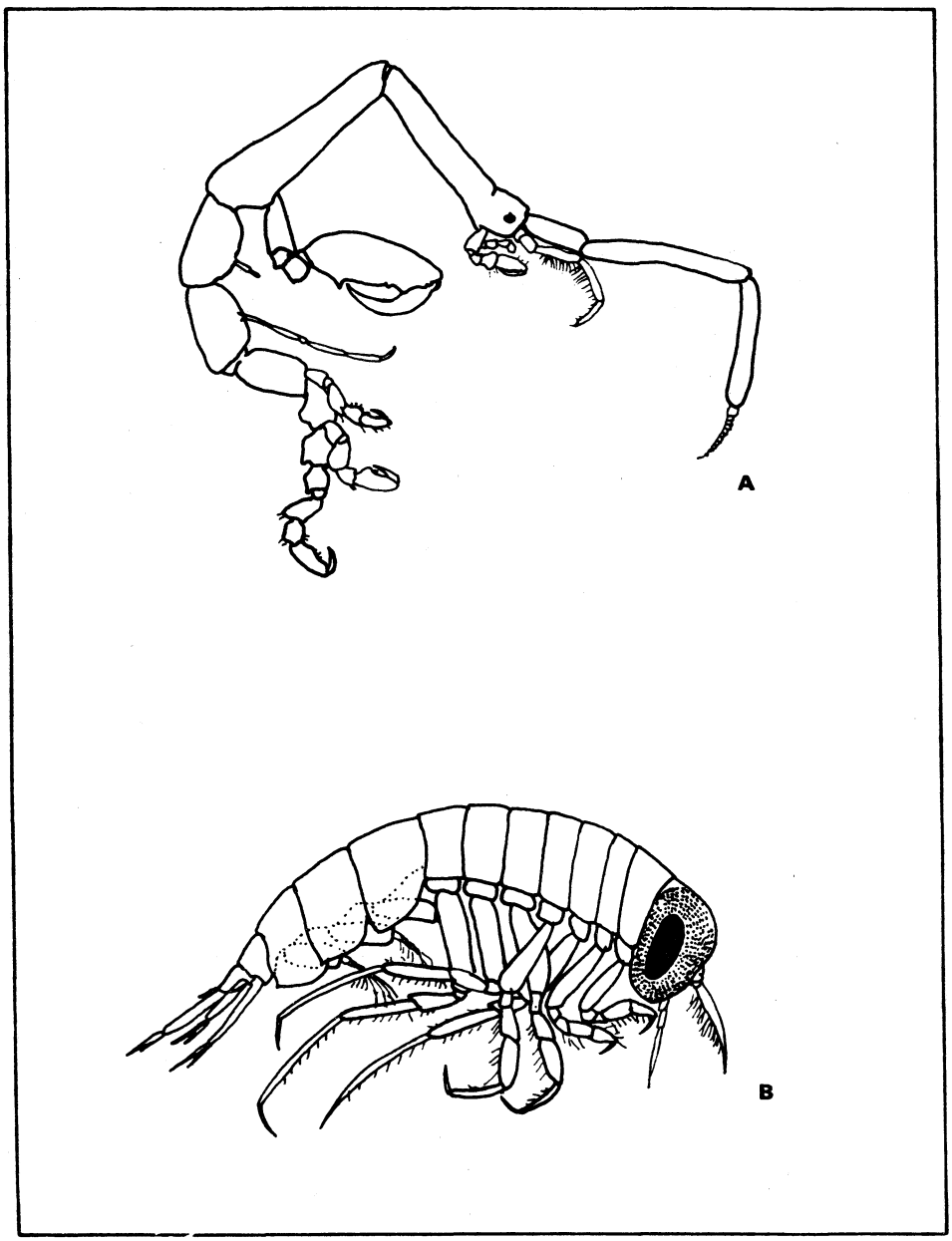

Fig. 1. A, generalized caprellidean amphipod with 6 free thoracic segments, reduced abdomen, head and segment bearing gnathopod 1 coalesced. B, generalized hyperiidean amphipod with large swollen head and eyes.

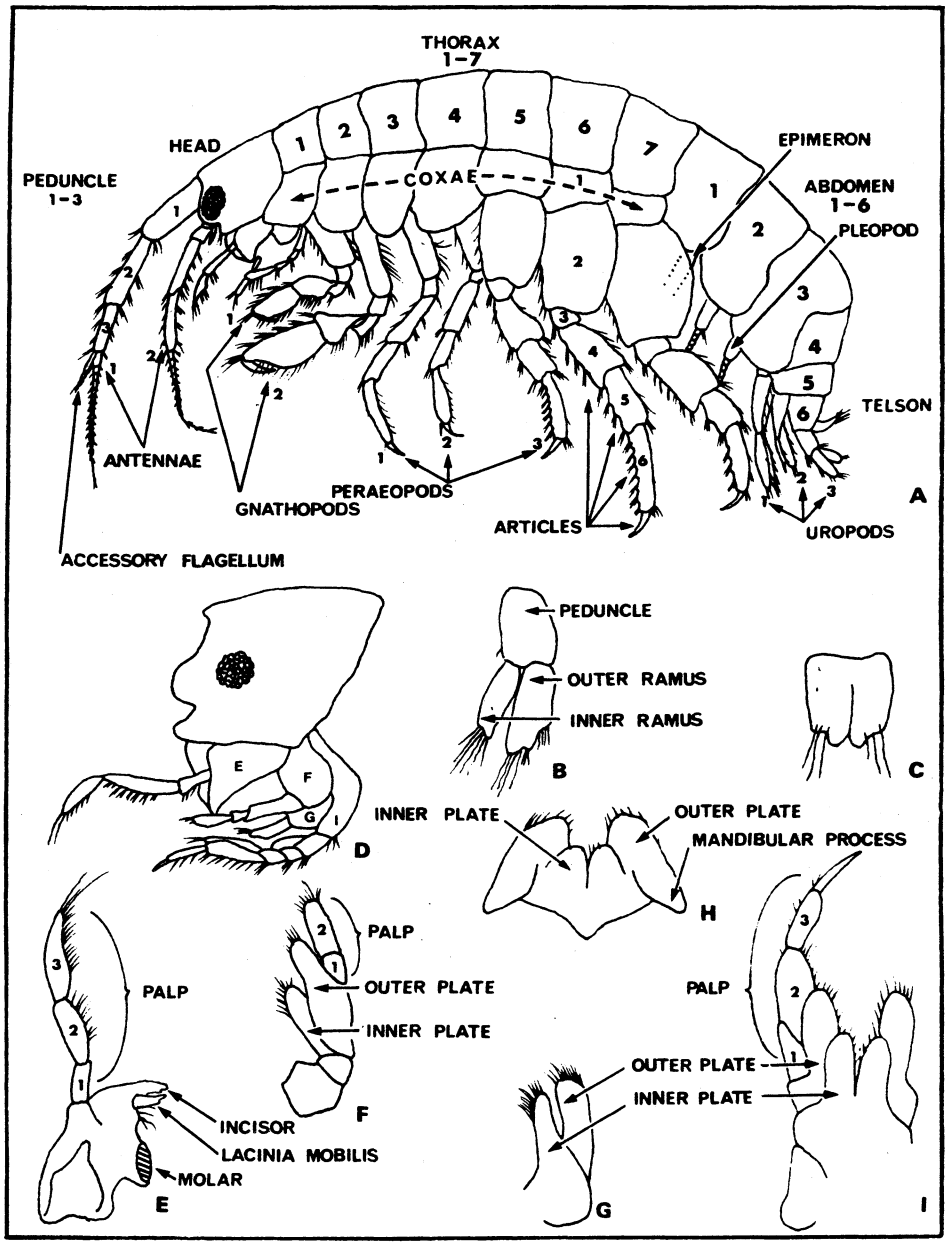

Fig. 2. A, generalized gammaridean amphipod. B, uropod 3. C, telson. D, head with mouthparts grouped ventrally. E, mandible. F, maxilla 1. G, maxilla 2. H, lower lip. I, maxilliped.

Head and eyes not swollen, maxillipeds present, (Fig. 2A) ..... Gammaridea

THE GAMMARIDEAN AMPHIPODS OF KAIKOURA

KEY TO FAMILIES

1. Eyes four, each with a simple lens, (Fig. 3B) ..... Ampeliscidae

   Eyes two, compound, may be rudimentary, absent or united 2

2. Gnathopod 2 of characteristic lysianassid form, (Fig. 11B), note combination of elongate article 3, mitten-shaped article 6 with small dactyl, numerous strong stiff setae on article 6 ..... Lysianassidae

   Gnathopod 2 lacking one or more characters of the lysianassid form, generally with article 3 short, article 6 not covered with stiff setae, and article 6 otherwise not mitten-shaped and usually enlarged 3

3. Uropod 3 with one ramus or without rami, (Fig. 10H, 12C, D) 4

   Uropod 3 with 2 rami, (Fig. 9D, 10A), inner or outer ramus occasionally very small, (Fig. 9E, 10C), (occasionally uropod 3 missing, then peraeopod 5 extremely elongate) 13

4. Uropod 3 with well developed ramus bearing 2 articles so that uropod 3 appears to have 3 articles in tandem (do not confuse abdominal segment 6 with an article), (Fig. 10H, 12C, D) 5

   Uropod 3 with or without ramus but ramus not biarticulate 7

5. Both pairs of gnathopods chelate, gnathopod 1 larger than 2 and chela short and blunt, (Fig. 11H), coxae 1-4 all short and equal to each other in length and general size, animal small, 2-4 mm ..... Sebidae

   Gnathopod 1 subchelate or simple, gnathopod 2 rarely chelate, (Fig. 12A), but often subchelate, (Fig. 12B), coxa 1 much smaller than the enlarged coxa 4, (Fig. 10H) 6

6. Coxa 1 visible and not hidden by coxa 4, coxae 2 and 3 smaller than coxa 1, (Fig. 10H) ..... Nihotungidae

   Coxa 1 hidden by coxa 4, coxae 2 and 3 much larger than coxa 1 ..... Stenothoidae

7. Body appearance of normal gammaridean, (Fig. 2A), with large coxae and lateral compression so that the body tends to lie on its side 8

   Body appearance abnormal: if coxae large then they are splayed and body is strongly depressed and tends to lie on its back or belly; if coxae small, body appears cylindroid, coxae usually very small 10

8. Antenna 1 with accessory flagellum, (Fig. 2A), gnathopod 2 of lysianassid form (Fig. 11B), mandibular palp present (Fig. 2E) ..... Lysianassidae

   Antenna 1 lacking accessory flagellum, mandible lacking palp, gnathopod 2 with short article 3 unlike lysianassid gnathopod 9

9. Uropod 3 without ramus, (Fig. 5E) ..... Ceinidae

   Uropod 3 with ramus ..... Talitridae

10. Body cylindroid or subcylindroid, vermiform, with abdomen not flexed underneath thorax 11

    Body not vermiform, thorax broad and depressed, abdomen flexed or partially flexed under thorax or strongly turned towards thorax 12

11. Mandible with palp ..... Corophiidae

    Mandible without palp ..... Eophliantidae

12. Coxae very large and splayed laterally, body very massive, dorsally depressed, slightly rugose, head and antennae very small and nearly hidden by large anterior coxae, (Fig. 11A) ..... Phliantidae

    Coxae very small and not splayed, body not very massive but broadened, slightly rugose, head and antennae large and visible, (Fig. 11C, D) ..... Podoceridae

13. Rami of uropod 3 equal to or shorter than peduncle, peduncle usually elongate 14

    Rami (or at least one ramus) of uropod 3 longer than peduncle, peduncle usually short 23

14. Coxa 1 much smaller than coxa 3 and partially hidden by coxa 2 ..... Amphilochidae

    Coxa 1 equivalent in size or larger than coxa 2 15

15. Gnathopod 1 strongly carpochelate, (Fig. 10J) ..... Leucothoidae

    Gnathopod 1 subchelate or nearly simple 16

16. Coxa 4 very large, larger than 1-3 combined, all together forming lateral shield, mandible without palp ..... Stegocephalidae

    Coxae 1-4 of normal gammaridean proportions, (Fig. 2A), mandible with palp, (Fig. 2E) 17

17. Telson cleft, (Fig. 9C) ..... Gammaridae

    Telson entire 18

18. Telson thin dorsoventrally, laminar 21

    Telson thick dorsoventrally, fleshy 19

19. Uropod 3, rami subequal, (Fig. 4E, 10A, E) 20

    Uropod 3, inner ramus very small, (Fig. 10C) ..... Isaeidae

20. Rami of uropod 3 broad, flat, heavily setose, outer ramus bearing 2 large articulate hooks, (Fig. 4E) ..... Ampithoidae

    Rami of uropod 3 lanceolate, not setose, (Fig. 10A, E, F) ..... Ischyroceridae

21. Rami of uropod 3 narrowly lanceolate and scarcely spinose, peraeopod 5 extremely elongate 22

    Rami of uropod 3 columnar to sublamellar, strongly setose apically, peraeopod 2 scarcely longer than peraeopod 4 ..... Gammaridae

22. Eyes contiguous above head, rostrum present ..... Oedicerotidae

    Eyes discontiguous above head, lateral, no pronounced rostrum, (see *Paracalliope*) ..... Eusiridae

23. Anterior coxae distally accuminate, (Fig. 3A) ..... Acanthonotozomatidae

    Anterior coxae rounded or quadrate distally 24

24. Abdominal segments 5-6 coalesced, (Fig. 5G, 6H) 25

    Abdominal segments free 28

25. Body subcylindrical, coxae short, wider (anteroposterior) than long (dorsoventral), gnathopod 1 long, thin and simple, (Fig. 5F), flagellae of antennae shorter than last peduncular articles ..... Colomastigidae

    Body laterally compressed, coxae long, anterior members as long or longer than broad, gnathopod 1 normally subchelate, some flagellae of antennae longer than their peduncles 26

26. Mandible lacking palp, some dorsal abdominal segments toothed, (Fig. 5G, 6H) ..... Dexaminidae

    Mandible with palp, dorsal abdominal segments not toothed 27

27. Telson entire, peraeopod 5 very elongate, (see *Paracalliope*) ..... Eusiridae

    Telson cleft, peraeopod 5 not much longer than peraeopod 4 ..... Atylidae

28. Telson thick, fleshy, puffy, articles 2 and 4 of peraeopods 1 and 2 with conspicuous glandular tissue concealing normal linear striation of muscles 29

    Telson thin, laminar, (occasionally with ventral keel or with lobes tilted to give impression of thickness), peraeopods 1 and 2 lacking glands 31

29. Inner ramus of uropod 3 minute and much shorter than outer ramus, (Fig. 10C) ..... Isaeidae

Rami of uropod 3 subequal to each other in length, lanceolate, setose and spinose 30

30. Gnathopod 1 smaller than gnathopod 2 ..... Isaeidae

Gnathopod 1 larger than gnathopod 2, gnathopod 1 immensely merochelate, (Fig. 5A) ..... Aoridae

31. Accessory flagellum vestigial, composed of 1 small article or absent ..... Eusiridae

Accessory flagellum usually well developed, bearing at least 2 articles, often 5 or more 32

32. Gnathopods 1 and 2 similar to each other, large, with long lobes on fifth articles, broadly subchelate palms usually with at least one cycle of hooked spines mixed among cycles of other kinds of spines, (Fig. 10D) ..... Liljeborgiidae

Gnathopods 1 and 2 dissimilar to each other but usually subchelate, gnathopod 2 often enlarged like gnathopods 1 and 2 of Liljeborgiidae but not bearing enlarged cycle of hooked spines 33

33. Head with a large visor or hood-like rostrum, (Fig. 11E) ..... Phoxocephalidae

Head lacking hood-like or visor-like rostrum 34

34. Peraeopods 3-5 fossorial, heavily setose and spinose, body heavy and squat, (not normally found in algae) ..... Haustoriidae

Peraeopods 3-5 not fossorial, body thin and long, (common in algae) ..... Gammaridae

KEY TO SPECIES ARRANGED BY FAMILIES

Acanthonotozomatidae

One species characterized by strongly serrated posterior margins on article 2 of peraeopods 3-5, (Fig. 3A) ..... *Panoploea spinosa*

Ampeliscidae

There are presently no species of this family reported from Kaikoura, but if you have an amphipod with four eyes, (Fig. 3B), each with a simple lens, congratulations, it's an ampeliscid.

Amphilochidae

1. Mandibular molar heavily triturative, cushion-shaped, (Fig. 3C) 2

Mandibular molar nearly simple and conical, (Fig. 3D) 4

2. Gnathopod 2 very large and with process on article 5 reaching almost to end of article 6, (Fig. 3I) ..... *Gitanopsis kupe*

   Gnathopod 2 either very small (article 6 much narrower than coxa 2) or with process on article 5 short 3

3. Article 6 of gnathopod 2 about 1.1 times as broad as article 2, (Fig. 3H), inner margin of lower lip incised, telson long and narrow and with 2 terminal notches, (Fig. 3G) ..... *Gitanopsis squamosa*

   Article 6 of gnathopod 2 more than twice as broad as article 2, (Fig. 3F), inner margin of lower lip smooth, telson ovate, smoothly rounded apically, (Fig. 3E) ..... *Gitanopsis desmondi*

4. Dactyls of gnathopods 1 and 2 neither distally attenuate nor pectinate on inner edge, dactyls fitting palms, gnathopods 1 and 2 nearly equal in size to each other, (Fig. 4A) ..... *Amphilochus opunake*

   Dactyls of gnathopods 1 and 2 distally attenuate, extended as filiform but apically spatulate claws overriding palms, pectinate on inner edges, (Fig. 4B) ..... *Amphilochus filidactylus*

Ampithoidae

1. Gnathopod 1 with rectolinear article 6 bearing short transverse palm, (Fig. 4C) 2

   Gnathopod 1 with expanded article 6 bearing long, oblique palm, (Fig. 4G, H) ..... *Ampithoe hinatore*

2. Telson with enormous posterolateral hook on each side, (Fig. 4D) ..... *Ampithoe lessoniae*

   Telson with small posterolateral knob(s) on each side, (Fig. 4F) ..... *Ampithoe aorangi*

Aoridae

One species characterized by an immensely merochelate gnathopod 1, (Fig. 5A), the process on article 4 may not be so well developed in some specimens ..... *Aora maculata*

Atylidae

One species characterized by abdominal segment 4 with dorsal crest and deep notch, (Fig. 5B), gills 1-4 broadly pinnate or complexly lobed, (Fig. 5D) ..... *Atylus taupo*

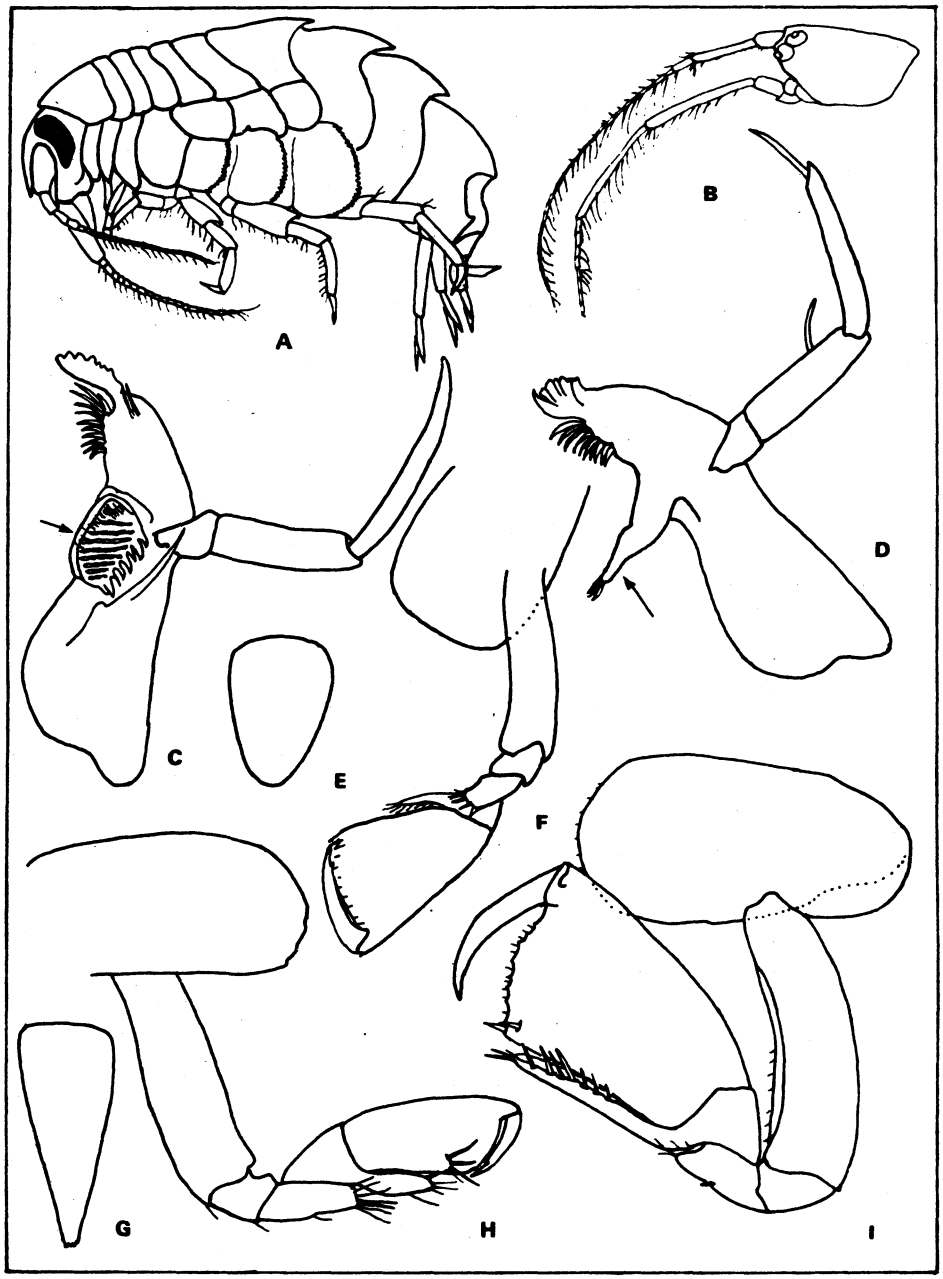

Fig. 3. *Panoploea spinosa*: A, note strongly serrated posterior margin of peraeopods 3-5. *Ampelisca* sp.: B, head with 2 simple eyes. *Gitanopsis kupe*: C, mandible, arrow indicates triturating molar; I, gnathopod 2. *Amphilochus opunake*: D, mandible, arrow indicates simple conical molar. *Gitanopsis desmondi*: E, ovate telson; F, gnathopod 2. *Gitanopsis squamosa*: G, triangular telson; H, gnathopod 2.

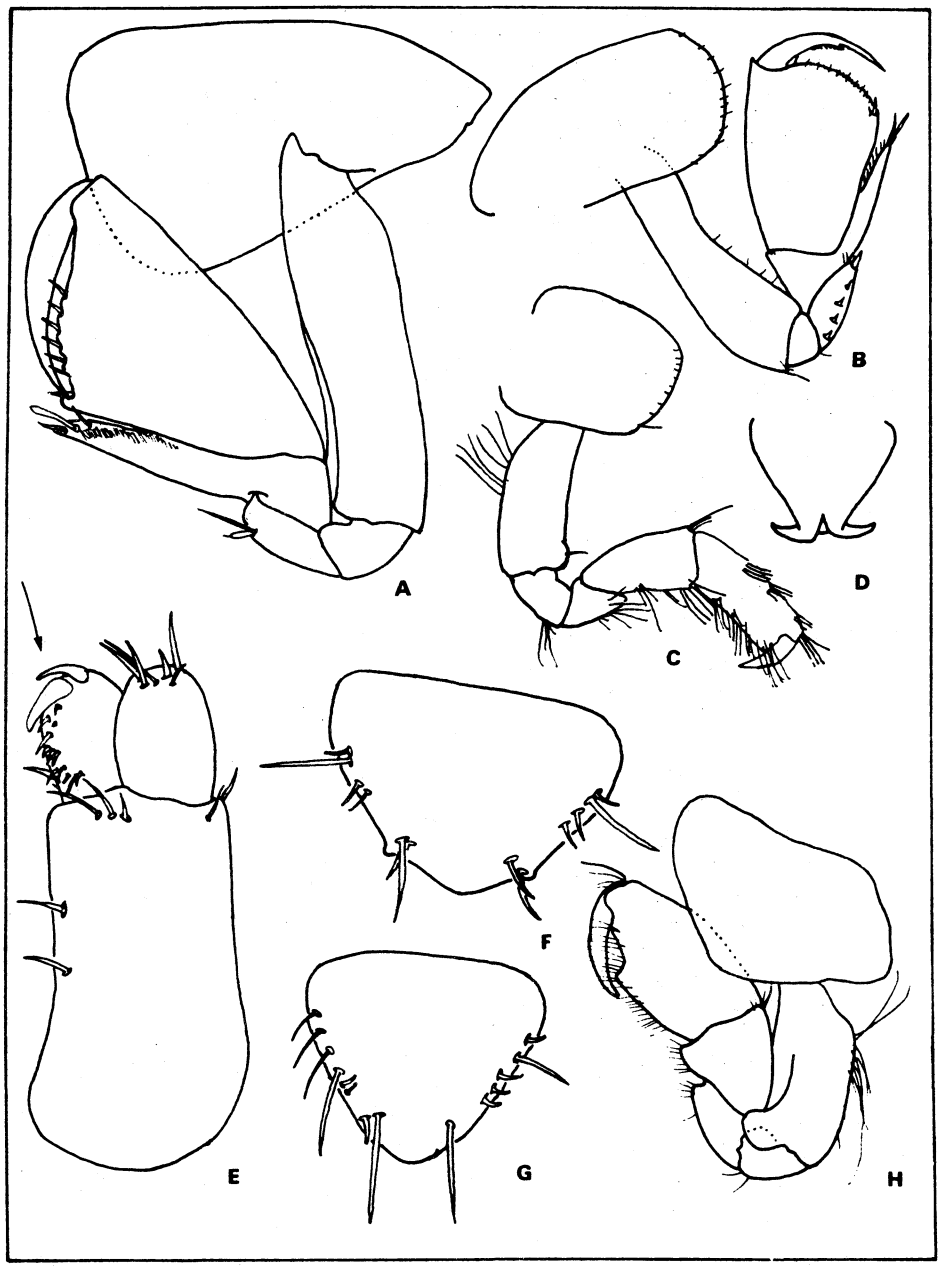

Fig. 4. *Amphilochus opunake*: A, gnathopod 2. *Amphilochus filidactylus*: B, gnathopod 2. *Ampithoe lessoniae*: C, gnathopod 1; D, telson *Ampithoe aorangi*: E, uropod 3, arrow indicates large hooks on outer ramus; F, telson. *Ampithoe hinatore*: G, telson; H, gnathopod 1.

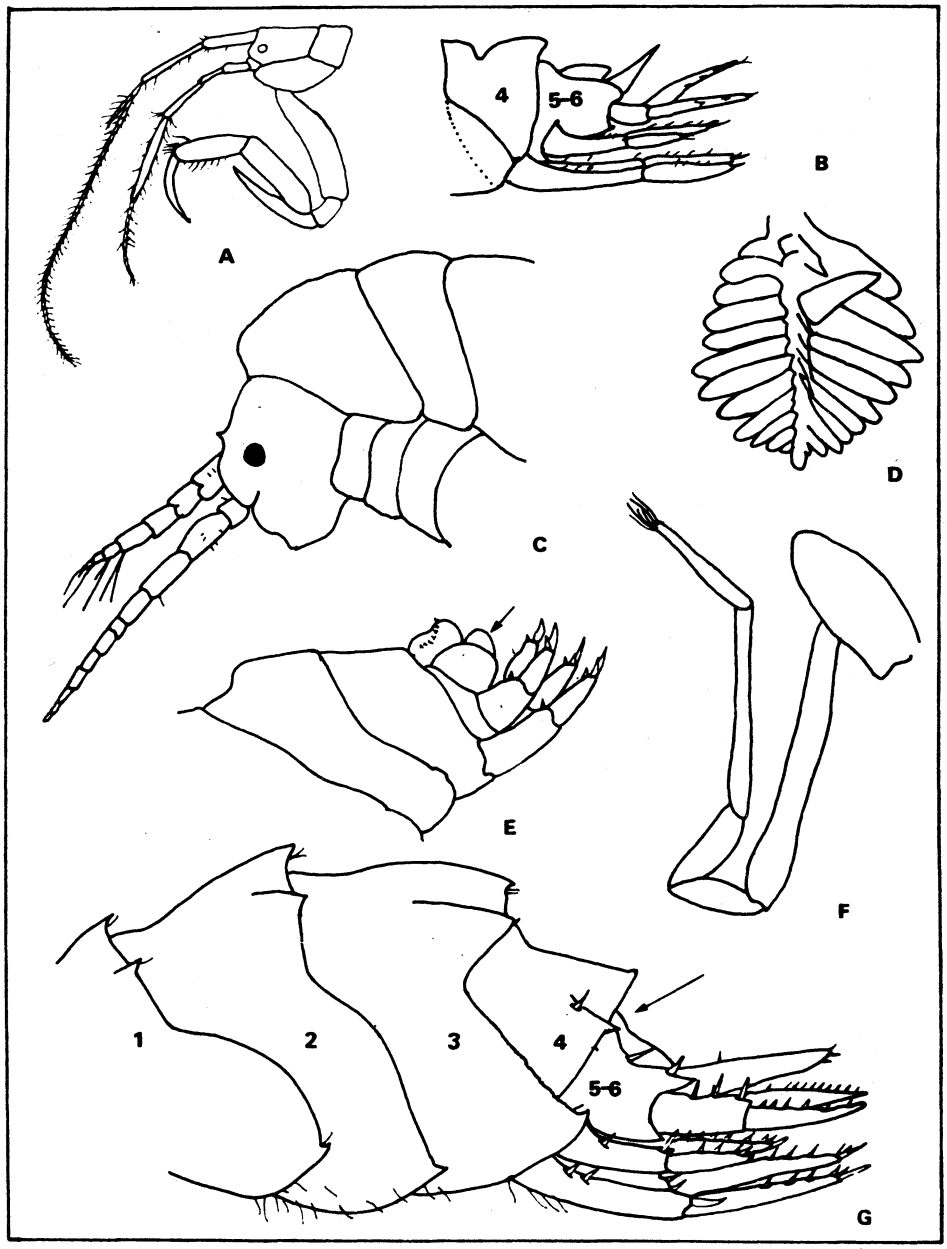

Fig. 5. *Aora maculata*: A, head and first thoracic segment with merochelate gnathopod 1. *Atylus taupo*: B, abdominal segments 4-6; D, pinnate gill. *Ceina egregia*: C, head and first 3 thoracic segments; E, posterior end of body, arrow indicates uropod 3 with no rami. *Colomastix subcastellata*: F, gnathopod 1. *Paradexamine muriwai*: G, abdominal segments 1-6, arrow indicates tooth on segment 4.

Ceinidae

One species characterized by uropod 3 without rami, (Fig. 5E), head attached to body in underslung fashion, (Fig. 5C) ..... *Ceina egregia*

Colomastigidae

One species characterized by filiform and simple gnathopod 1, (Fig. 5F) ..... *Colomastix subcastellata*

Corophiidae

1. Gnathopod 2 simple, uropod 2 biramous, antenna 2, peduncular article 4 with 2-3 spines (male), (Fig. 6B), antenna 2, 5 spines set in single row (female), (Fig. 6D) ..... *Corophium sextonae*

   Gnathopod 2 carpochelate (male), (Fig. 6A), subchelate (female), (Fig. 6C, E), uropod 2 uniramous, peduncular article 2 without spines 2

2. Antenna 1, peduncular article 1 slightly widened distally, not extending along article 2, (Fig. 6G), gnathopod 2 (female) articles 5 and 6 long and linear, (Fig. 6E), tube smooth, antennae and head mottled brown ..... *Cerapus* sp. A

   Antenna 1, peduncular article 1 widened distally, extending 1/2 length of article 2, (Fig. 6F), gnathopod 2 (female) articles 5 and 6 compressed, (Fig. 6C), tube covered with detritus, antennae and head orange and white ..... *Cerapus* sp. B

Dexaminidae

1. Lateral cephalic lobe anteriorly rounded, abdominal segment 4 with dorsal tooth and one lateral tooth each side, abdominal segment 1 with dorsal tooth, abdominal segments 5-6 with one spine each side, (Fig. 5G) ..... *Paradexamine muriwai*

   Lateral cephalic lobe with sharp cusp, abdominal segment 4 with only 1 dorsal tooth, abdominal segment 1 with or without dorsal tooth, abdominal segments 5-6 with 2 spines each side, (Fig. 6H) 2

2. Abdominal segment 1 with dorsal tooth, (Fig. 6H) ..... *Paradexamine houtete*

   Abdominal segment 1 without dorsal tooth ..... *Paradexamine pacifica*

Eophliantidae

Pleopods with one short ramus, (Fig. 7G) .... *Cylindryllioides kaikoura*

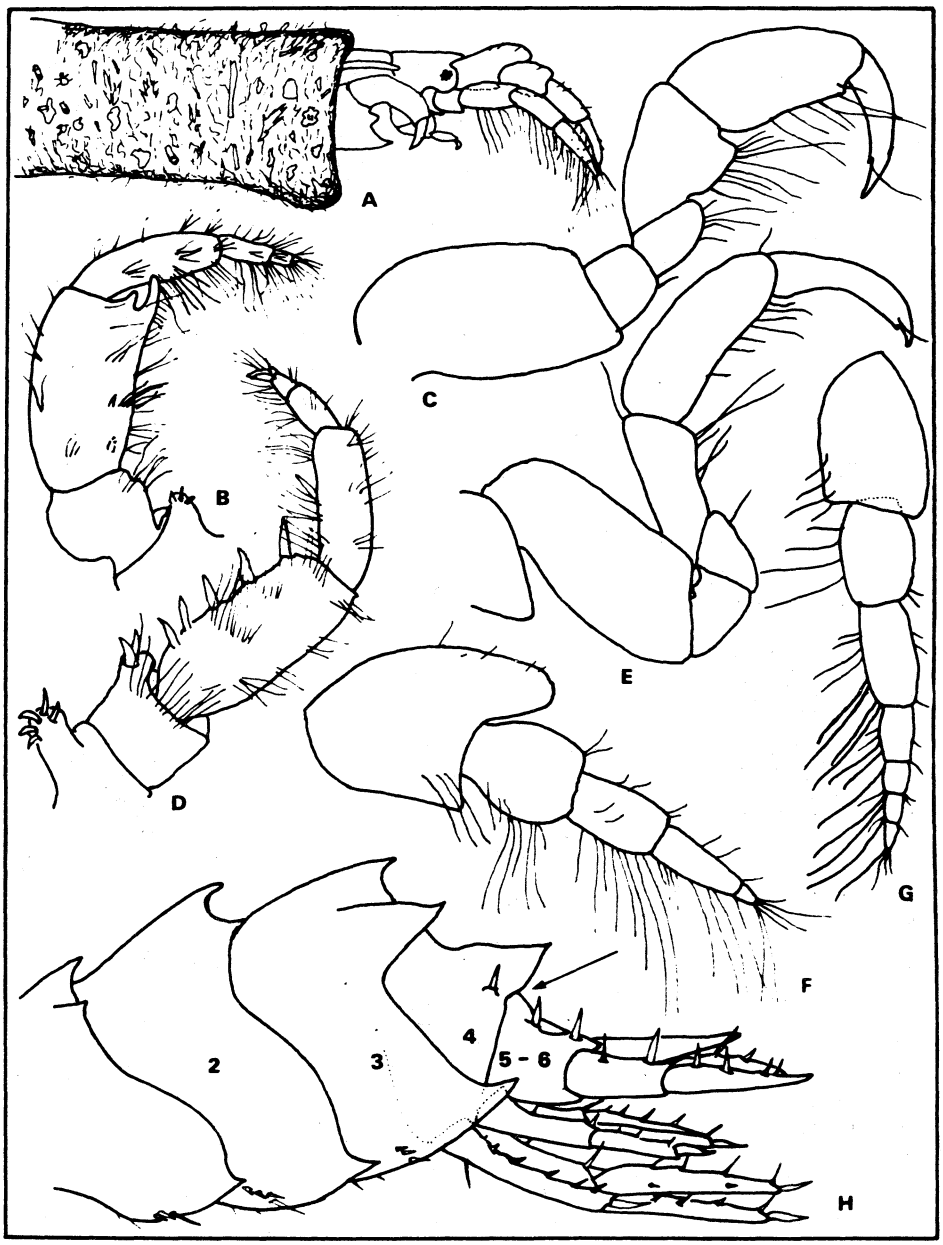

Fig. 6. *Cerapus* sp. B: A, anterior end of body projecting from tube; C, gnathopod 2, female; F, antenna 1. *Corophium sextonae*: B, antenna 2, male; D, antenna 2, female. *Cerapus* sp. A: E, gnathopod 2, female; G, antenna 1. *Paradexamine houtete*: H, abdominal segments 1-6, arrow indicates missing dorsal tooth on segment 4.

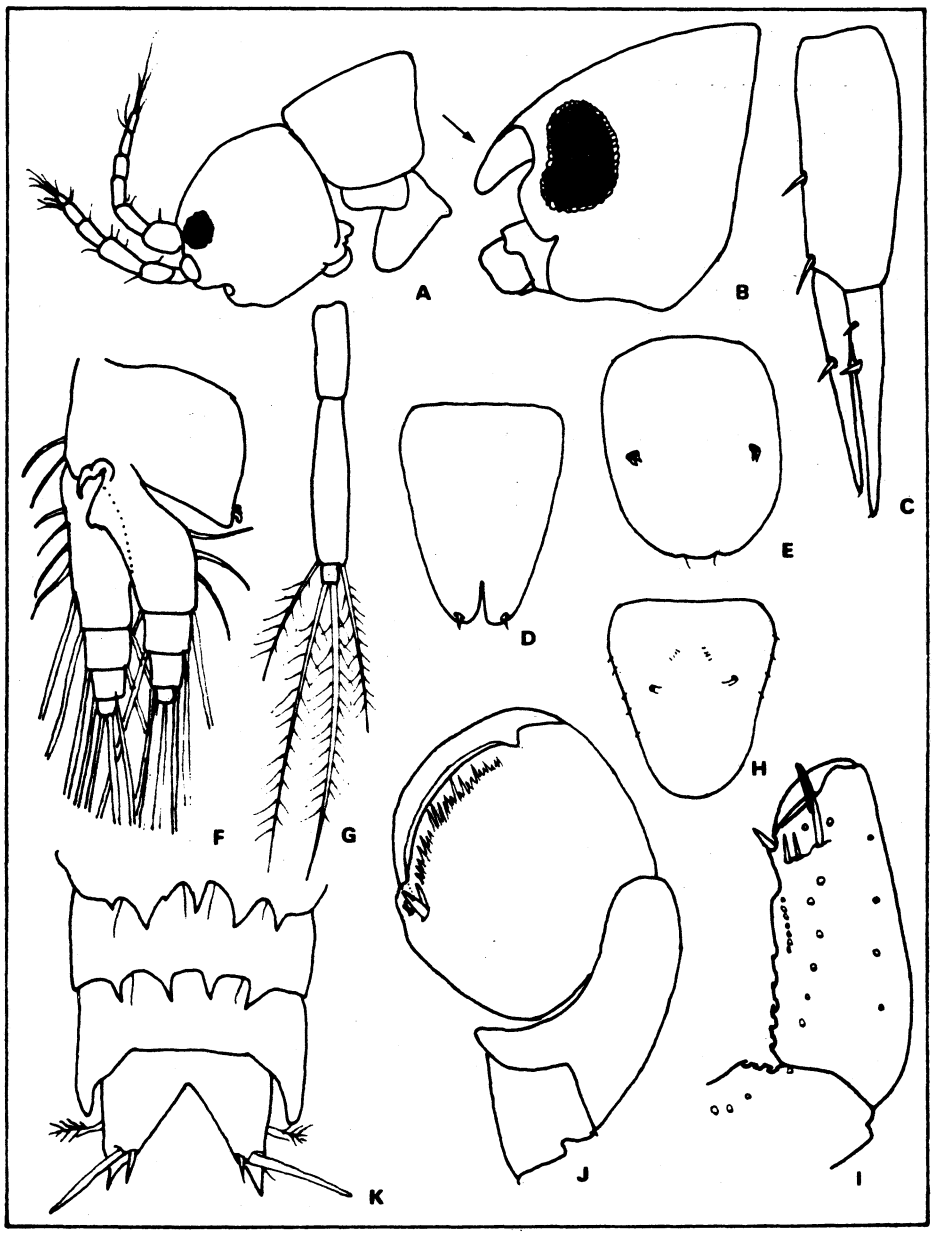

Fig. 7. *Bircenna fulva*: A, head and thoracic segment 1; F, pleopod. *Pontogeniella levis*: B, head, arrow indicates long rostrum; D, telson. *Paracalliope novizealandiae*: C, uropod 3; E, telson. *Cylindryllioides kaikoura*: G, pleopod. *Oradarea novaezealandiae*: H, telson; I, gnathopod 2, setae not drawn. *Eusirus* sp.: J, gnathopod 2, setae not drawn. *Ceradocus rubromaculatus haumuri*: K, abdominal segments 4-6 and telson.

Pleopods with two well developed rami, (Fig. 7F), thoracic segment 1 bearing ventral cradle behind head, (Fig. 7A) ..... *Bircenna fulva*

Eusiridae

1. Gnathopods with article 5 long, narrow, recurved, lobe extending between articles 4 and 6, (Fig. 7J) ..... *Eusirus* sp.

   Gnathopod 2 extremely elongate, articles 5 and 6 very long, (Fig. 7I), telson uncleft, (Fig. 7H) ..... *Oradarea novaezealandiae*

   Gnathopod 2 of normal gammaridean dimensions 2

2. Head with long rostrum, (Fig. 7B), telson cleft, (Fig. 7D) ..... *Pontogeneiella levis*

   Head with short, normal rostrum 3

3. Peraeopod 5 very elongate, with long straight styliform and setose article 7, peduncle of uropod 3 elongate (rami not longer than peduncle), (Fig. 7C), telson uncleft, (Fig. 7E) ..... *Paracalliope novizealandiae*

   Peraeopod 5 scarcely longer than peraeopod 4, peduncle of uropod 3 not elongate and rami longer than peduncle 4

4. Hands of gnathopods subcircular to ovate, gnathopods 1 and 2 of equivalent size, large, palms strongly tumid and evenly lined with one row (on a side) of very large stout spines, (Fig. 8A) ..... *Eusiroides monoculoides*

   Hands of gnathopods subrectangular, gnathopods 1 and 2 rarely of equivalent size, usually small, palms weakly tumid and unevenly lined with thin, and or small spines 5

5. Inner plate of maxilla 1 thin and with 2 to 3 terminal setae, (Fig. 8B), accessory flagellum very small or absent 6

   Inner plate of maxilla 1 basally expanded and bearing 4+ setae along medial margin, (Fig. 8C), accessory flagellum forming setose lappet as long as article 1 of primary flagellum, (Fig. 8D) ..... *Paramoera chevreuxi*

6. Abdominal epimeron 3 with broadly rounded posterior margin meeting posteroventral corner far ventrally at slight notch bearing spinule, (Fig. 8G) ..... *Gondogeneia danai*

   Abdominal epimeron 3 with angularly rounded posterior margin meeting ventral margin with rounded obtuse corner, no notch or spine, (Fig. 8E) ..... *Gondogeneia rotorua*

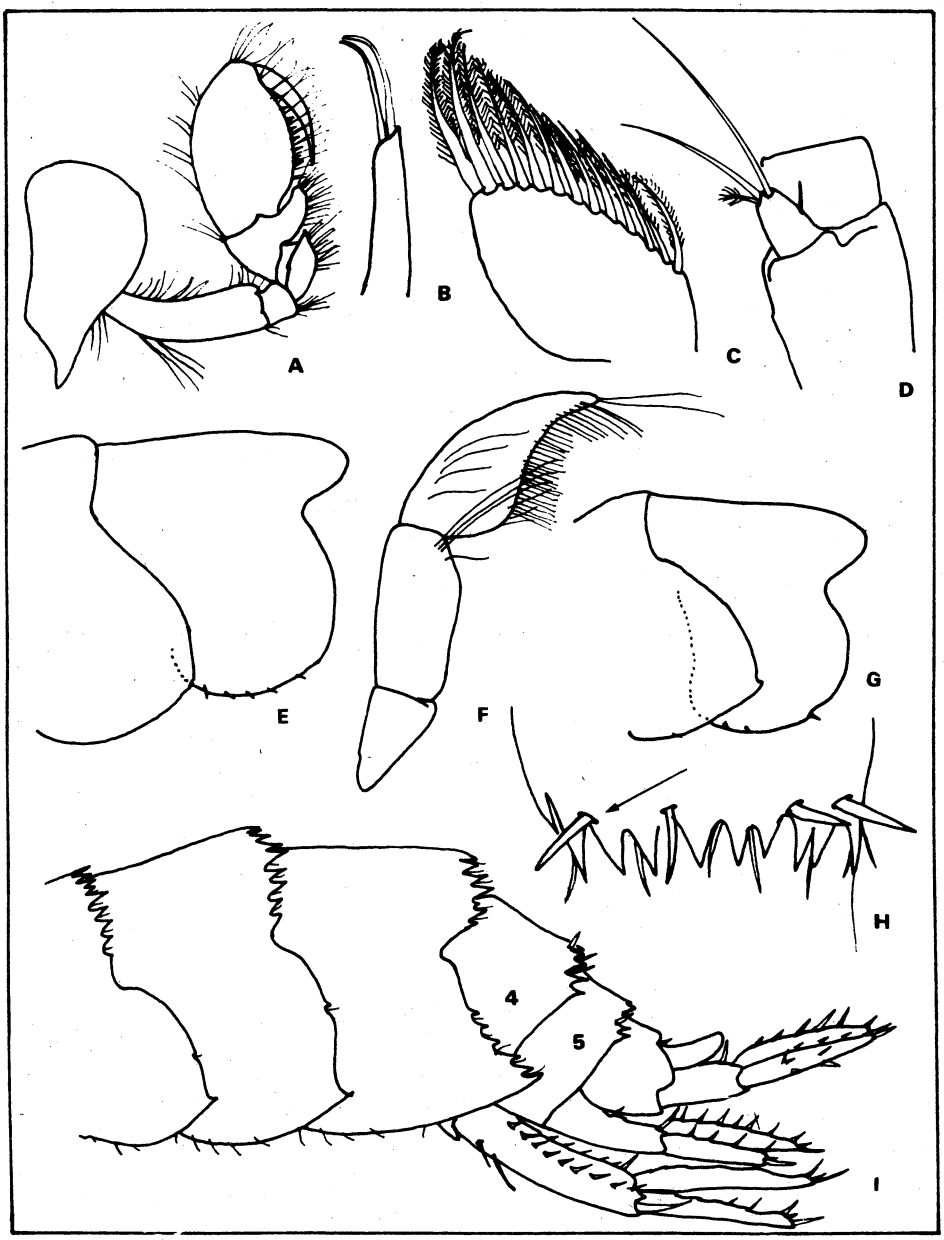

Fig. 8. *Eusiroides monoculoides*: A, gnathopod 2. *Gondogeneia danai*: B, inner plate of maxilla 1; G, abdominal epimeron 3. *Paramoera chevreuxi*: C, inner plate of maxilla 1; D, accessory flagellum of antenna 1. *Gondogeneia rotorua*: E, abdominal epimeron 3. *Elasmopus bollonsi*: F, mandibular palp. *Metaceradocus whakatane*: H, abdominal segment 4, arrow indicates articulate spine; I, abdominal segments 1-6.

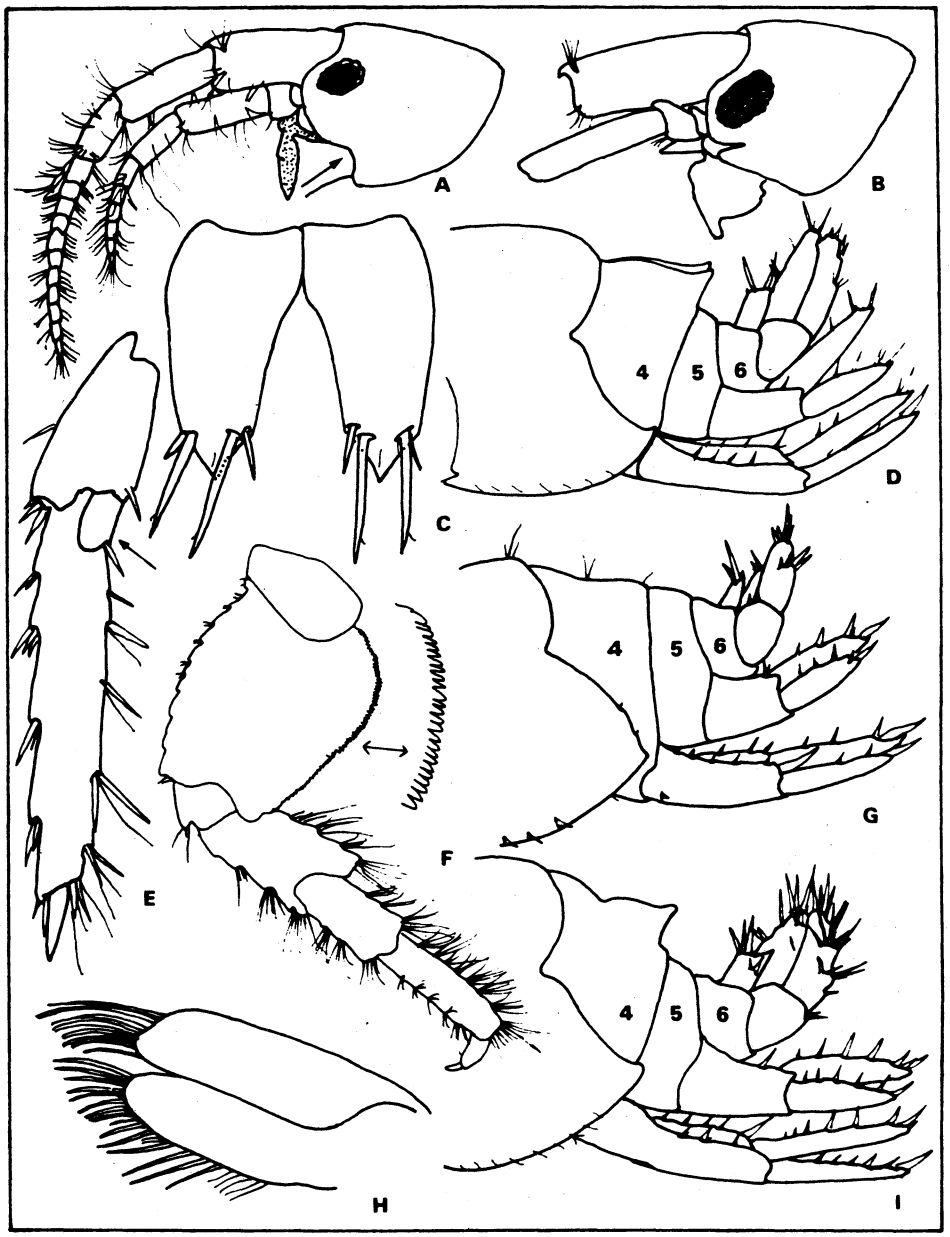

Fig. 9. *Ceradocopsis peke*: A, head, arrow indicates anteroventral notch; H, maxilla 2. *Mallacoota subcarinata*: B, head with anteroventral notch; D, abdominal segments 3-6. *Melita inaequistylis*: C, telson; E, uropod 3, arrow indicates short scale-like inner ramus. *Elasmopus neglectus*: F, peraeopod 5, arrow indicates posterior serrated edge; I, abdominal segments 3-6. *Elasmopus bollonsi:* G, abdominal segments 3-6.

Gammaridae

1. Telson entire, uropod 1 with interramal tooth ..... *Parapherusa crassipes*

   Telson cleft, uropod 1 without interramal tooth 2

2. Abdominal segments 1-5 with dorsally serrated margins 3

   Abdominal segments 1-5 dorsally smooth, occasionally segment 4 with 1 or 2 parasagittal carinae, (Figs 9D, G, I) 4

3. Abdominal segments 4 and 5 with small dorsal articulate spines in addition to fixed teeth (Fig. 8H, I) ..... *Metaceradocus whakatane*

   Abdominal segments 4 and 5 without small dorsal articulate spines, (Fig. 7K) ..... *Ceradocus rubromaculatus haumuri*

4. Inner ramus of uropod 3 very short and scale-like, outer ramus very long and 2-articulate, (Fig. 9E), head with deep anteroventral notch (from lateral view), telsonic lobes apically sharp, (Fig. 9C) ..... *Melita inaequistylis*

   Rami of uropod 3 equal to each other in length, long or short, article 2 on outer ramus vestigial if present 5

5. Palp article 3 of mandible expanded and falcate, densely armed with closely packed setae forming comb row, (Fig. 8F) 6

   Palp article 3 of mandible thin, not falcate, bearing a few long setae mostly terminal 7

6. Abdominal segment 4 with 1 sharp sagittal carina, (Fig. 9I), article 2 of peraeopod 5 with deep posterior castelloserrations, (Fig. 9F) ..... *Elasmopus neglectus*

   Abdominal segment 4 dorsally smooth, article 2 of peraeopod 5 with normal (weak or sparse) posterior serrations, (Fig. 9G) ..... *Elasmopus bollonsi*

7. Inner plate of maxilla 2 with medial setae, (Fig. 9H), head with anteroventral excavation, no notch, no tooth, (Fig. 9A) ..... *Ceradocopsis peke*

   Inner plate of maxilla 2 with no medial setae, head with anteroventral notch or tooth 8

8. Abdominal segment 4 with 2 dorsal parasagittal carinae, (Fig. 9D), head with anteroventral notch, (Fig. 9B) ..... *Mallacoota subcarinata*

   Abdominal segment 4 dorsally smooth, head with anteroventral tooth ..... *Maera incerta*

Haustoriidae

There are presently no members of this normally infaunal family reported from Kaikoura.

Isaeidae

1. Inner ramus of uropod 3 minute and much shorter than outer ramus, (Fig. 10C) ..... *Photis* sp.

   Rami of uropod 3 subequal to each other in length, rami lanceolate 2

2. Telson not emarginate, male gnathopod 1 with narrow hand and excavate palm, male gnathopod 2 extremely setose on article 2 (anterior), and articles 5 and 6, gnathopod 2 narrow, hand long, rectangular, with oblique short palm bearing large tooth near dactylar hinge, small excavation and medium defining tooth, dactyl fitting palm or scarcely so, (Fig. 10I) ..... *Gammaropsis tawahi*

   Telson not emarginate, male gnathopod 1 with narrow hand, palm not excavate, male gnathopod 2 with large, elongate, narrow, article 5 with posterior lobe free only in juveniles, becoming immersed between articles 4 and 6 in adult, hand with proximoposterior lump in juveniles, migrating proximally in adult and assuming appearance of a lobe on article 5, distal end of hand with bilobation forming weak palm in juvenile, dactyl about half length of hand in juvenile, (Fig. 10G) ..... *Gammaropsis typica*

Ischyroceridae

1. Outer ramus of uropod 3 bearing strong, distally hooked spine clearly articulate, with base partially submerged in ramus, one edge of ramus with 1 to 3 reverted thorns, (Fig. 10F) ..... *Jassa falcata*

   Outer ramus of uropod 3 lacking large distal hook, though ramus itself distally hooked and occasionally bearing minute apical seta or articulate scale 2

2. Solid apex of outer ramus on uropod 3 forming slightly hooked, elongate distal knob with adjacent proximal knob, outer ramus with 1 midlateral wire-like seta, (Fig. 10A) ..... *Ventojassa frequens*

   Solid apex of outer ramus on uropod 3 forming strongly hooked, sharp cusp with 1 to 6 closely proximal villi or cusps, apex occasionally with seta or scale, (Fig. 10E) ..... *Ischyrocerus longimanus*

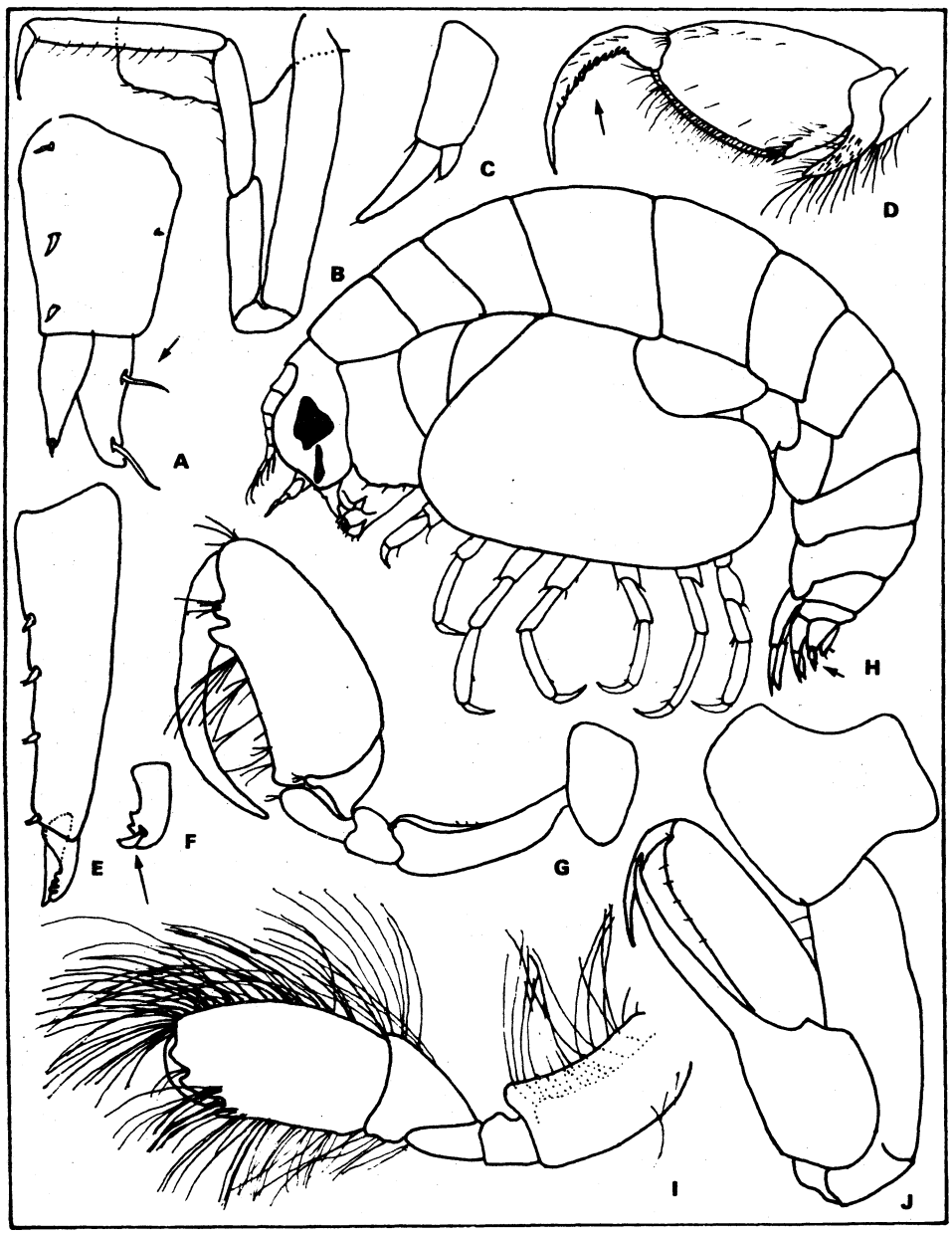

Fig. 10. *Ventojassa frequens*: A, uropod 3, arrow indicates wire-like mid-lateral seta on outer ramus. *Liljeborgia akaroica*: B, peraeopod 2; D, gnathopod 2, arrow indicates teeth on dactyl. *Photis* sp.: C, uropod 3. *Ischyrocerus longimanus*: E, uropod 3. *Jassa falcata*: F, outer ramus of uropod 3, arrow indicates distally hooked articulating spine. *Gammaropsis typica*: G, gnathopod 2, adult male. *Nihotunga noa*: H, female, arrow indicates biarticulated ramus of uropod 3. *Gammaropsis tawahi*: I, gnathopod 2, adult male. *Leucothoe trailli*: J, gnathopod 1.

Leucothoidae

One species characterized by a strongly carpochelate gnathopod 1, (Fig. 10J) ..... *Leucothoe trailli*

Liljeborgiidae

One species characterized by abdominal segments 4 and 5 each with weak posterodorsal tooth, article 6 of peraeopod 2 posteriorly lined with about 11 strong spines, dactyls of gnathopods 1 and 2 with 6 and 9 to 10 teeth respectively on inner margins, (Fig. 10D) ..... *Liljeborgia akaroica*

Lysianassidae

Three undescribed species in the genus *Parawaldeckia* have been reported from intertidal algae at Kaikoura.

Nihotungidae

One species characterized by coxa 1 visible and not hidden by coxa 4, coxæ 2 and 3 smaller than coxa 1, uropod 3 uniramous, (Fig. 10H) ..... *Nihotunga noa*

Oedicerotidae

There are presently no members of this normally infaunal family reported from Kaikoura.

Phliantidae

One species characterized by massive body, large coxae and very small head and antennae, (Fig. 11A) ..... *Iphinotus typicus*

Phoxocephalidae

One species characterized by head with large hood-like rostrum, (Fig. 11E), and posterior edge of article 2, peraeopod 5 slightly serrated, (Fig. 11F) ..... *Paraphoxus waipiro*

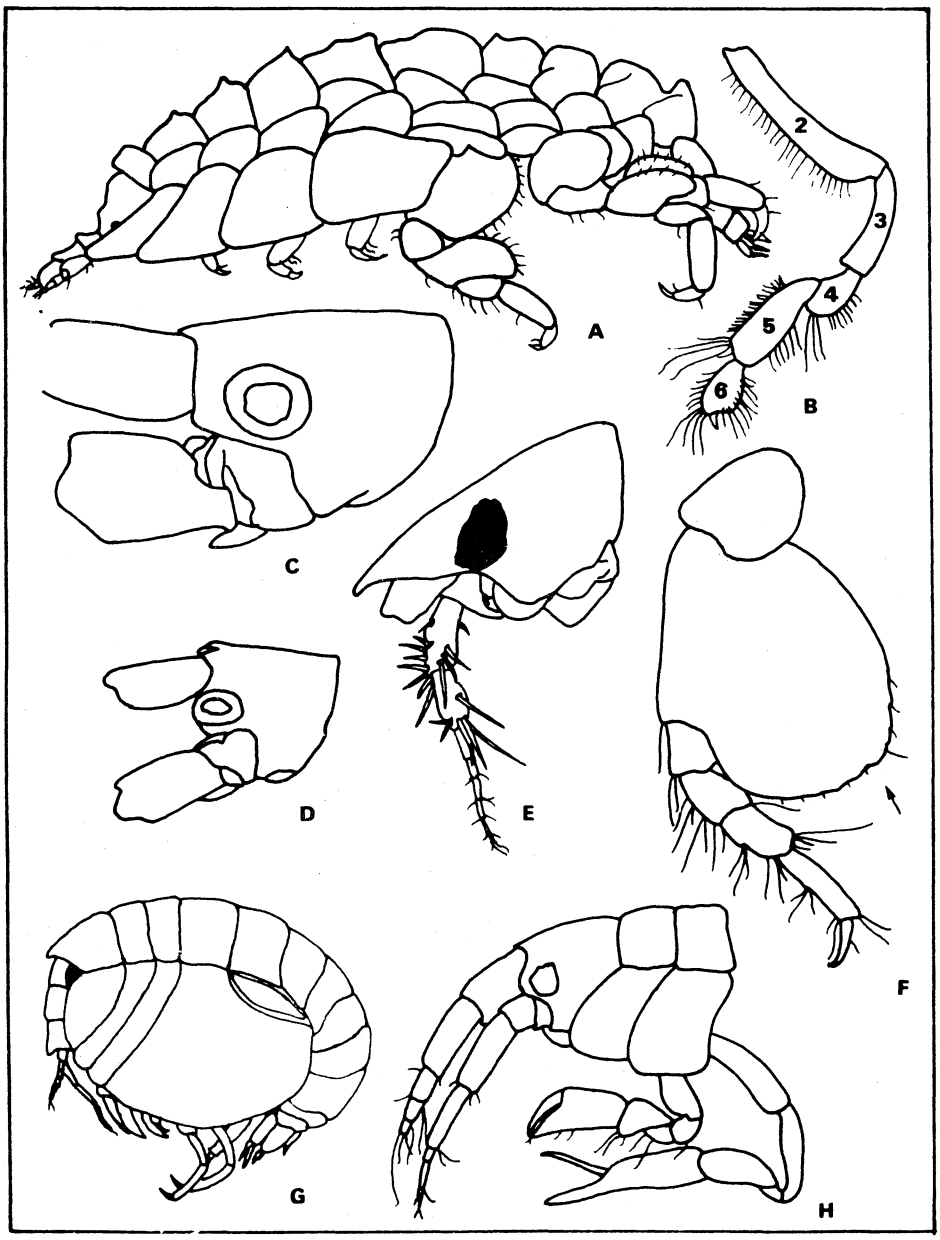

Fig. 11. *Iphinotus typicus*: A, female. Lysianassid: B, gnathopod 2. *Podocerus karu*: C, head. *Podocerus manawatu*: D, head. *Paraphoxus waipiro*: E, head; F, peraeopod 5. *Tetradeion crassum*: G, habit sketch. *Seba typica*: H, head and thoracic segments 1 and 2.

Podoceridae

Eye enclosed within strong bulge set directly at anteroventral corner of head, that bulge forming head corner, though behind bulge a small, sharp flange occasionally seen, (Fig. 11D) ..... *Podocerus manawatu*

Eye enclosed within bulge set well posterior of sharp anteroventral corner of head, (Fig. 11C) ..... *Podocerus karu*

Sebidae

One species characterized by chelate gnathopods 1 and 2, gnathopod 1 larger than 2, (Fig. 11H) ..... *Seba typica*

Stegocephalidae

One species characterized by coxa 4 larger than 1-3 combined, body pigmented black, (Fig. 11G) ..... *Tetradeion crassum*

Stenothoidae

Gnathopod 2 chelate, (Fig. 12A) ..... *Raumahara rongo*

Gnathopod 2 subchelate, (Fig. 12B) ..... *Stenothoe moe*

Talitridae

1. Amphipods living in tide pools or in the sea on algae or under rocks 2

   Amphipods living on the beach, usually above the high tide mark, under driftwood, in the wrack, or burrowing in the sand 6

2. Peraeopods with distal locking spine on article 6 forming deeply striate arrowhead next to striped lanceolate locking spine, (Fig. 12I) ..... *Hyale maroubrae*

   Peraeopods lacking arrowhead locking spine 3

3. Peraeopod 5, locking spine occurring as single large spirally striate column, (Fig. 12J) ..... *Hyale media*

   Peraeopod locking formula composed of at least 2 spines or, if one spine only, that spine very small and simple 4

4. Uropod 1 with distolateral end of peduncle bearing enlarged spine, this spine much larger than other peduncular spines 5

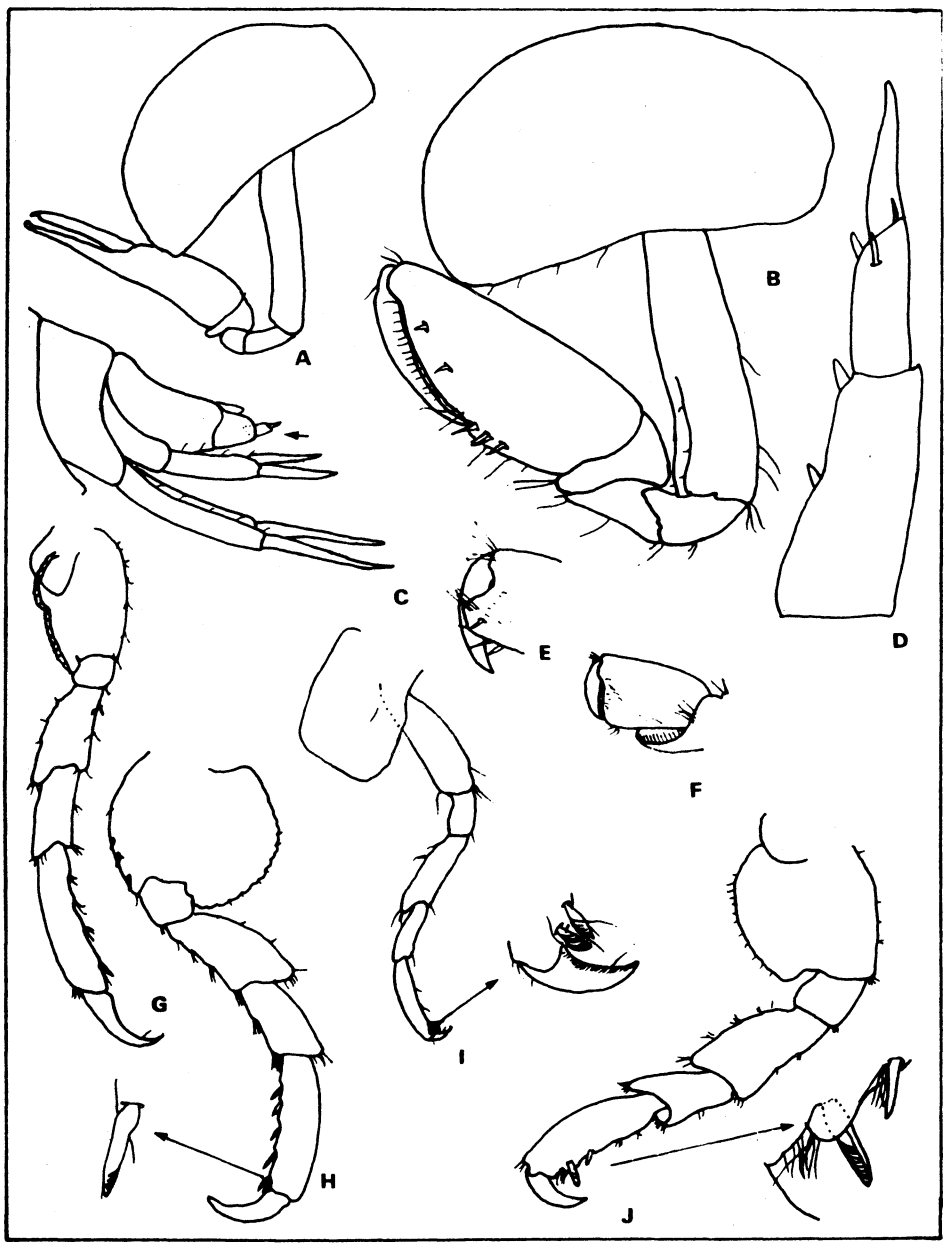

Fig. 12. *Raumahara rongo*: A, gnathopod 2; C, posterior end, arrow indicates biarticulate ramus. *Stenothoe moe*: B, gnathopod 2; D, uropod 3, biarticulate ramus. *Allorchestes novizealandiae*: E, gnathopod 1, male, articles 6 and 7; F, gnathopod 1, female, articles 5-7. *Hyale grenfelli*: G, peraeopod 5. *Hyale rubra*: H, peraeopod 5, arrow indicates enlarged striate locking spine. *Hyale maroubrae*: I, peraeopod 1, arrow indicates enlarged striate arrowhead and striate lanceolate locking spines. *Hyale media*: J, peraeopod 5, arrow indicates enlarged striate flat locking spine.

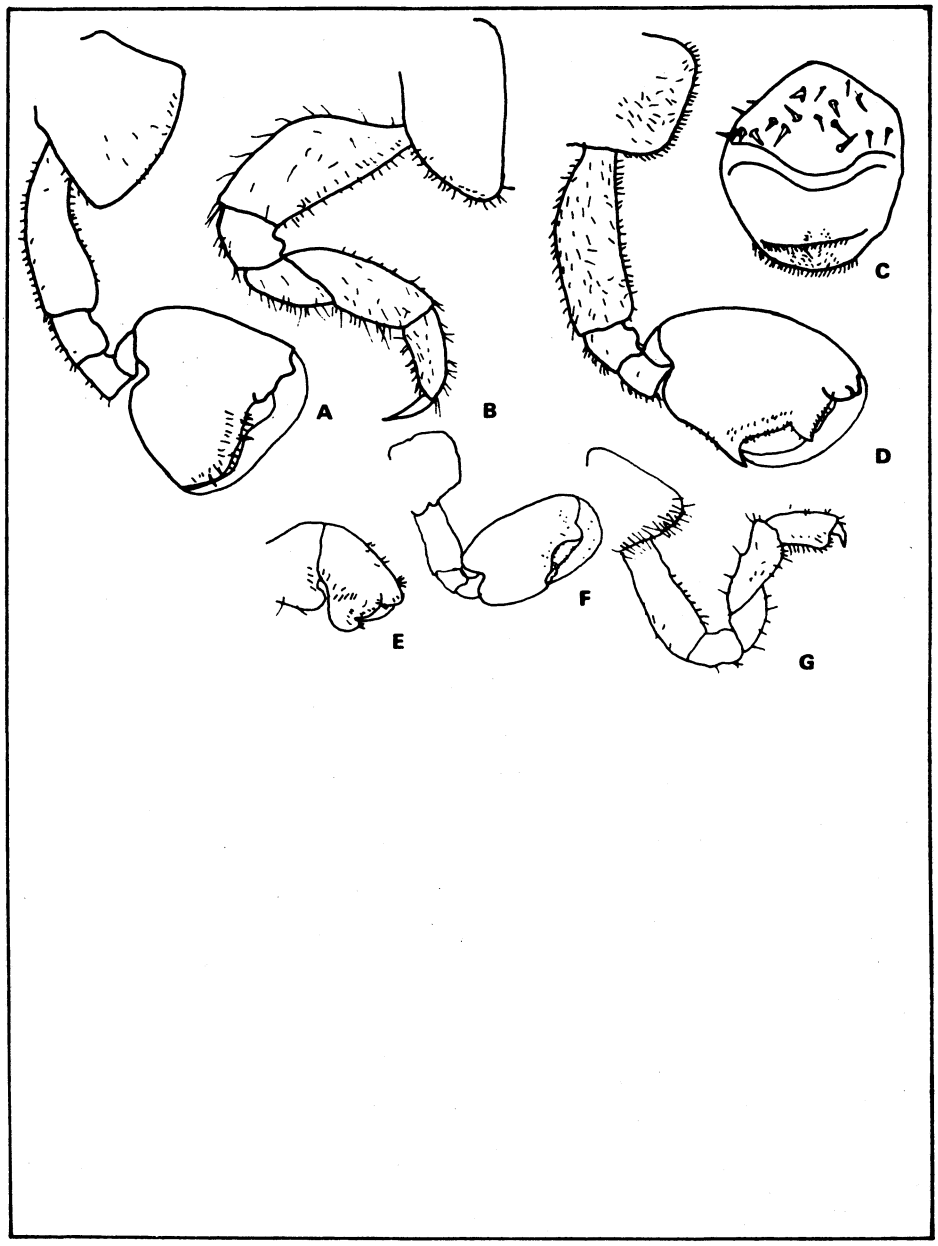

Fig. 13. *Talorchestia cookii:* A, gnathopod 2, adult male; B, gnathopod 1, female. *Talorchestia quoyana:* C, upper lip; D, gnathopod 2, adult male. *Orchestia chiliensis:* E, gnathopod 1, adult male; F, gnathopod 2, adult male; G, gnathopod 1, female.

Uropod 1 with distolateral end of peduncle bearing unenlarged spine, occasionally mediodistal end with enlarged spine, palm of gnathopod 1 precisely transverse (both sexes), (Fig. 12E, F) ..... *Allorchestes novizealandiae*

5. Distal locking spine (and others) on article 6 of peraeopods spirally striate, (Fig. 12H) ..... *Hyale rubra*

Distal locking spine on article 6 not striate, (Fig. 12G) ..... *Hyale grenfelli*

6. Female with gnathopod 1 simple, (Fig. 13B) 7

Female with gnathopod 1 subchelate, (Fig. 13G), male with article 6 of gnathopod 1 strongly produced, (Fig. 13E), gnathopod 2 enlarged, palm excavate, (Fig. 13F) ..... *Orchestia chiliensis*

7. Epistome of upper lip strongly spined, (Fig. 13C), male with gnathopod 2 enlarged, palm oblique, defined by a prominent tooth at each palmar extremity, (Fig. 13D) ..... *Talorchestia quoyana*

Epistome of upper lip smooth, without spines, male with gnathopod 2 enlarged, article 5 with knob on posterior margin, article 6 swollen, palm transverse, (Fig. 13A) ..... *Talorchestia cookii*

CHECKLIST

Habitat sources are abbreviated as follows:

(JLB) - J.L. Barnard, National Museum of Natural History, Washington, D.C., U.S.A.
(GDF) - G.D. Fenwick, Department of Zoology, University of Canterbury, Christchurch, N.Z.
(KJG) - K.J. Graham, New South Wales State Fisheries, Sydney, Australia.
(DSH) - D.S. Horning, Department of Zoology, University of Canterbury, Christchurch, N.Z.
(DEH) - D.E. Hurley, New Zealand Oceanographic Institute, Wellington, N.Z.
(JKL) - J.K. Lowry, Department of Zoology, University of Canterbury, Christchurch, N.Z.

Names in the checklist marked with an asterisk are not included in the keys.

Place names in the Kaikoura area referred to in the checklist are shown in Fig. 14.

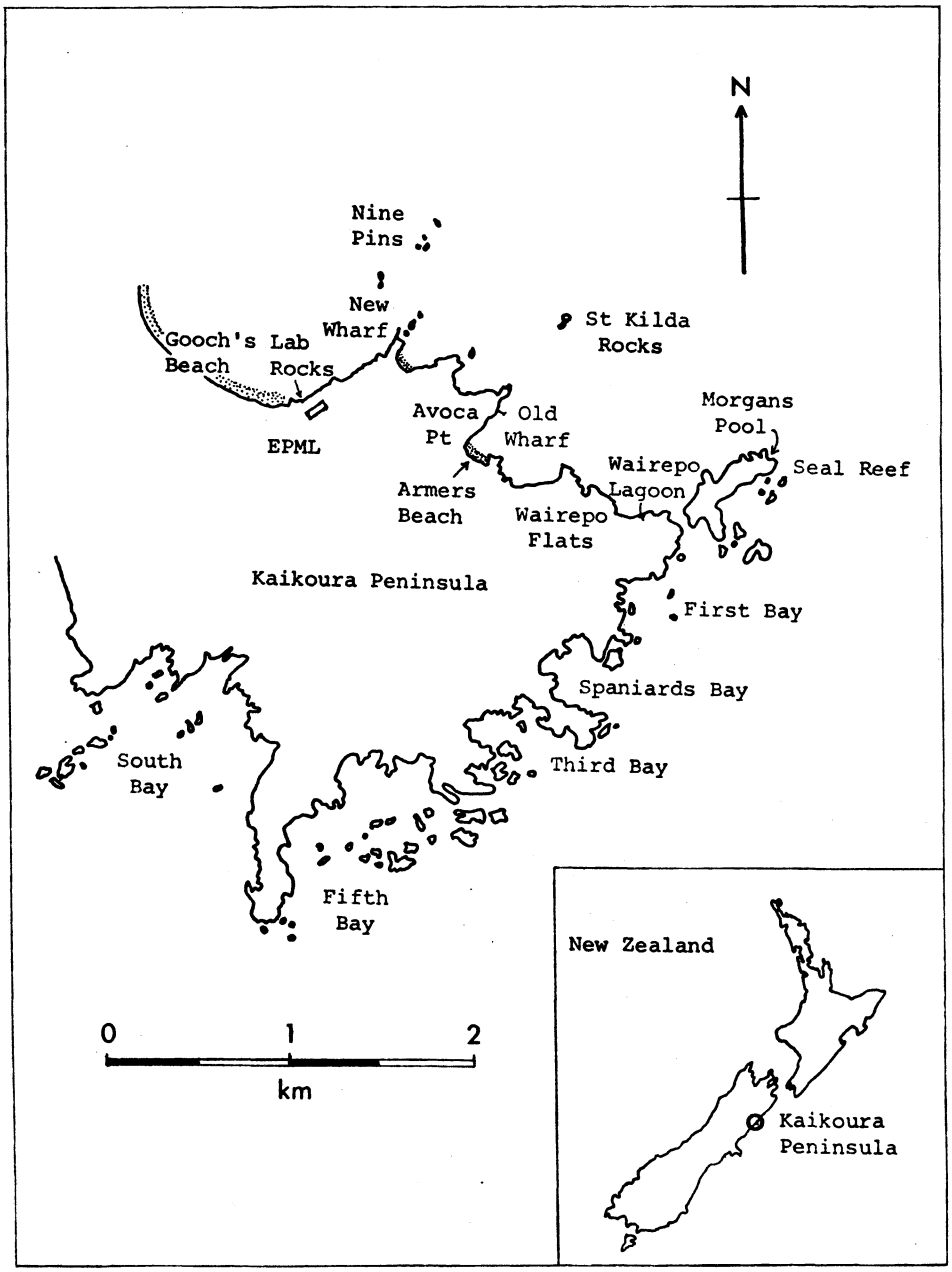

Fig. 14. Kaikoura Peninsula showing locations referred to in the checklist.

THE GAMMARIDEAN AMPHIPODS OF KAIKOURA

Family Acanthonotozomatidae

Panoploea spinosa Thomson, 1880: 3, pl. 1, Fig. 2; Hurley, 1954d: 766, 769-771, Figs 1-35; Barnard, 1972: 31.
Habitat: Rare on *Caulerpa brownii* at Old Wharf in 6-7 m (GDF).
Distribution: Dunedin to Hauraki Gulf, Auckland Islands.

Family Amphilochidae

Amphilochus filidactylus Hurley, 1955: 209, 211, 213, Figs 67-90; Barnard, 1972: 31.
Habitat: Rare on *Caulerpa brownii* (JLB); rare on *Pyura pachydermatina* in Otago Harbour (DEH).
Distribution: Otago Harbour, Kaikoura.

Amphilochus opunake Barnard, 1972: 33-34, Figs 4, 5.
Habitat: Rare on *Caulerpa brownii* (JLB).
Distribution: Kaikoura, Wellington, Leigh.

Gitanopsis desmondi Barnard, 1972: 34; Hurley, 1955: 216, 218, 220, Figs 119-138, as *Gitanopsis pusilloides*.
Habitat: Rare on coralline algae, *Caulerpa brownii* and algae associated with *Hormosira banksii* (JLB).
Distribution: Port Chalmers, Dunedin, Kaikoura, Leigh.

Gitanopsis kupe Barnard, 1972: 34, 35, Figs 6, 7.
Habitat: Rare on algae in Morgan's Pool, tip of Seal Reef.
Distribution: Kaikoura.

Gitanopsis squamosa (Thomson), 1880: 4, pl. 1, Figs 4, 4a; Hurley, 1955: 213-214, 216, Figs 91-118; Barnard, 1972: 36.
Habitat: Uncommon on coralline algae, *Caulerpa brownii* and algae associated with *Hormosira banksii* (JLB).
Distribution: Throughout New Zealand, Circumsubantarctic.

**Neocyproidea pilgrimi* Hurley, 1955: 206, Figs 51-62; Barnard, 1972: 37.
Habitat: Rare on bryozoans at Fifth Bay in 5-15 m (JKL).
Distribution: Banks Peninsula, Kaikoura, Hawke Bay, Whangaparaoa Peninsula.

Family Ampithoidae

Ampithoe aorangi Barnard, 1972: 37, Figs 8, 9, 10a-e.
Habitat: Rare on algae associated with kelp holdfasts (JLB).
Distribution: Kaikoura to Leigh.

Ampithoe hinatore Barnard, 1972: 37-38, 40, 42, Figs 11, 12.
Habitat: Rare on *Caulerpa brownii* (JLB).
Distribution: Kaikoura.

Ampithoe (Pleonexes) lessoniae (Hurley), 1954A: 620, 622-623, 625-626; Figs 1, 2. Barnard, 1972: 44; Figs 13, 14.
Habitat: Rare on algae associated with kelp holdfasts (JLB).
Distribution: Kaikoura; Wellington; Whangaparaoa Peninsula; Leigh.

Family Aoridae

Aora maculata (Thomson), 1879b: 331, pl. 16, Figs 5-8; Barnard, 1972: 124, Fig. 10f-h.
Habitat: Common on coralline algae and algae associated with *Hormosira banksii*, uncommon on *Caulerpa brownii* and algae associated with kelp holdfasts (JLB), uncommon in *Zostera* beds at Gooch's Beach and Wairepo Lagoon (JKL).
Distribution: Throughout New Zealand.

Family Atylidae

Atylus taupo Barnard, 1972: 47-48, Figs 16, 17.
Habitat: Rare in plankton tows off Seal Reef.
Distribution: Kaikoura.

Family Ceinidae

Ceina egregria (Chilton), 1883: 77-78, pl. 2, Fig. 2; Barnard, 1972: 170, 172, Figs 93, 94.
Habitat: Uncommon on *Caulerpa brownii*, rare on coralline algae and algae associated with kelp holdfasts and *Hormosira banksii* (JLB).
Distribution: Lyttelton, Kaikoura, Wellington, Leigh.

Family Colomastigidae

Colomastix subcastellata Hurley, 1954b: 420, 422, 424-425, Figs 1-31; Barnard, 1972: 48.
Habitat: Rare on *Caulerpa brownii* (JLB), rare on *Pyura pachydermatina* in Otago Harbour (DEH).
Distribution: Otago Harbour, Kaikoura.

Family Corophiidae

Cerapus sp. A
Habitat: Common on *Caulerpa brownii* at St Kilda Rocks in 5-15 m, and at Old Wharf in 5 m (GDF), rare on *C. brownii* at Fifth Bay in 5-15 m (DSH, JKL).
Distribution: Kaikoura.

Cerapus sp. B
Habitat: Common on bryozoans at St Kilda Rocks in 5-15 m (DSH, GDF), common on *Caulerpa brownii* at Old Wharf in 5 m (GDF), rare on bryozoans and *C. Brownii* at Fifth Bay in 5-15 m (DSH, JKL).
Distribution: Kaikoura.

**Cerapus* sp. C
Habitat: Common on *Caulerpa brownii* at Fifth Bay in 5-15 m (DSH, JKL), rare on *C. brownii* at Old Wharf in 5 m (GDF).
Distribution: Kaikoura.

Corophium sextonae Crawford, 1937: 620-623, Figs 3A-H, 4G-H; Hurley, 1954c: 433, 435-436, 438-439, Figs 1-21.
Habitat: Rare in *Zostera* beds at Wairepo Lagoon (JKL).
Distribution: Otago Harbour, Lyttelton Harbour, Kaikoura.

Family Dexaminidae

Paradexamine houtete Barnard, 1972: 53, 57, Figs 20-22.
Habitat: Uncommon on *Caulerpa brownii*, rare on coralline algae and algae associated with *Hormosira banksii* (JLB).
Distribution: Kaikoura to Leigh.

Paradexamine muriwai Barnard, 1972: 57, Figs 23-25.
Habitat: Rare on *Caulerpa brownii* (JLB).
Distribution: Kaikoura.

Paradexamine pacifica (Thomson), 1879a: 38, pl. 10B, Fig. 4; Barnard, 1972: 60.
Habitat: Uncommon at Wairepo Flats in *Caulerpa brownii*, and at St Kilda Rocks on red algae, LW - 8 m (GDF).
Distribution: Throughout New Zealand, Auckland Islands, Campbell Island.

Family Eophliantidae

Bircenna fulva Chilton, 1884: 264, pl. 21, Fig. 1a-c; Barnard, 1972: 180, 182-183, Figs 67 O,100-102.
Habitat: Common in holdfast of the Bull kelp, *Durvillea antarctica* (JKL), uncommon in algae associated with kelp holdfasts, rare on coralline algae and algae associated with *Hormosira banksii* (JLB).
Distribution: Lyttelton Harbour, Kaikoura, Wellington, Whangaparaoa Peninsula, Leigh, Tapeka Point.

Cylindryllioides kaikoura Barnard, 1972: 184, Figs 103, 104.
Habitat: Rare on algae in Morgan's Pool, tip of Seal Reef.
Distribution: Kaikoura.

**Wandelia wairarapa* Barnard, 1972: 187, 190, Figs 105, 106.
Habitat: Rare at St Kilda Rocks on red algae in 8 m (GDF).
Distribution: Kaikoura, Wellington.

Family Eusiridae

**Apherusa transluscens* (Chilton), 1884: 263-264, pl. 21, Fig. 3; Barnard, 1972: 64, 66.
Habitat: Uncommon at Wairepo Flats on *Caulerpa brownii* (GDF).
Distribution: Lyttelton Harbour, Kaikoura, Whangaparaoa Peninsula.

Eusiroides monoculoides (Haswell), 1880b: 327-328, pl. 18, Fig. 4; Barnard, 1972: 66, 68, Fig. 67 l, m.
Habitat: Uncommon on *Caulerpa brownii* (JLB).
Distribution: Otago Harbour, Kaikoura, Three Kings Islands.

Eusirus sp.
Habitat: Rare among sublittoral bryozoans at St Kilda Rocks, 5-15 m (GDF, JKL).
Distribution: Kaikoura.

Gondogeneia danai (Thomson), 1879a: 238-239, pl. 10C, Fig. 1; Barnard, 1972: 87, 89, Figs 41, 42.
Habitat: Uncommon on coralline algae and algae associated with kelp holdfasts and *Hormosira banksii* (JLB).
Distribution: Throughout New Zealand.

Gondogeneia rotorua Barnard, 1972: 91, Fig. 43.
Habitat: Rare on *Caulerpa brownii* (JLB).
Distribution: Dunedin, Kaikoura.

Oradarea novaezealandiae (Thomson), 1879a: 239, pl. 10C, Fig. 2; Barnard, 1972: 68-70, Fig. 30.
Habitat: Rare on coralline algae, *Caulerpa brownii* and algae associated with *Hormosira banksii* (JLB).
Distribution: Throughout New Zealand, Auckland Islands, Campbell Island.

Paracalliope novizealandiae (Dana), 1853: 934-935, pl. 63, Fig. 7; Barnard, 1972: 78, Figs 35-37.
Habitat: Rare on coralline algae and algae associated with *Hormosira banksii* (JLB).
Distribution: Kaikoura to Leigh.

Paramoera chevreuxi (Stephensen), 1927: 339-342, Fig. 18; Barnard, 1972: 82, Figs 38, 39.
Habitat: Common on intertidal rocks covered with coralline algae and *Hormosira banksii*, rare on algae associated with kelp holdfasts (JLB).
Distribution: Dunedin, Kaikoura, Wellington, Auckland Islands, Campbell Islands.

Pontogeneiella levis (Thomson), 1879b: 330, pl. 16, Figs 1-4; Barnard, 1972: 93, 95, Fig. 44.
Habitat: Uncommon on coralline algae and algae associated with *Hormosira banksii*, rare on *Caulerpa brownii* (JLB).
Distribution: Dunedin to North Cape.

Family Gammaridae

Ceradocopsis peke Barnard, 1972: 95, 98, Figs 45, 46.
Habitat: Rare on algae associated with kelp holdfasts (JLB).
Distribution: Kaikoura.

Ceradocus rubromaculatus haumuri Barnard, 1972: 98, Fig. 47.
Habitat: Rare on algae associated with kelp holdfasts (JLB), rare on underside of rocks at Wairepo Flats (GDF).
Distribution: Kaikoura, Wellington.

Elasmopus bollonsi Chilton, 1915: 328-330, Figs 11, 12; Barnard, 1972: 98, 101, Figs 48, 49.
Habitat: Rare on algae in Morgan's Pool, tip of Seal Reef.
Distribution: Kaikoura, Three Kings Islands.

Elasmopus neglectus Chilton, 1915: 326-328, Figs 7-10; Barnard, 1972: 101, Figs 50, 51.
Habitat: Uncommon on *Caulerpa brownii*, rare on algae associated with kelp holdfasts (JLB).
Distribution: Otago to Mokohinau Island.

Maera incerta Chilton, 1883: 83-84, pl. 3, Fig. 3; Barnard, 1972: 105, 107, 109, Fig. 54.
Habitat: Rare on *Caulerpa brownii* and algae associated with kelp holdfasts (JLB).
Distribution: Lyttelton Harbour, Kaikoura, Wellington.

**Maera masteri* (Haswell) 1880a: 265-266, pl. 11, Fig. 1; Barnard, 1972: 109-110, Figs 55, 56.
Habitat: Rare at Lab. Rocks on lower littoral algae (GDF).
Distribution: Otago Harbour, Kaikoura.

Mallacoota subcarinata (Haswell), 1880b: 335, pl. 21, Fig. 4; Barnard, 1972: 114, Figs 59, 60.
Habitat: Uncommon on *Caulerpa brownii* (JLB).
Distribution: Throughout New Zealand.

Melita inaequistylis Dana, 1852: 214; Barnard, 1972: 117, 119, Figs 61 i-o, 62 j-l, 64.
Habitat: Uncommon on coralline algae, *Caulerpa brownii* and algae associated with *Hormosira banksii* (JLB).
Distribution: Throughout New Zealand.

Metaceradocus whakatane Barnard, 1972: 119, 122, Figs 65, 66.
Habitat: Uncommon on *Caulerpa brownii*, rare on coralline algae and algae associated with *Hormosira banksii* (JLB).
Distribution: Kaikoura, Wellington, Leigh.

Parapherusa crassipes Haswell, 1880b: 330-331, 349, pl. 19, Fig. 3; Barnard, 1972: 122, 124, Figs 67 a-g.
Habitat: Common on *Caulerpa brownii* and algae associated with kelp holdfasts, uncommon on coralline algae and algae associated with *Hormosira banksii* (JLB).
Distribution: Throughout New Zealand, Antipodes Islands.

Family Isaeidae

Gammaropsis tawahi Barnard, 1972: 126, Figs 68, 69.
Habitat: Common on algae associated with kelp holdfasts, uncommon on *Caulerpa brownii* (JLB).
Distribution: Kaikoura, Wellington.

Gammaropsis typica (Chilton), 1884: 259-261, pl. 19, Fig. 1 a-h; Barnard, 1972: 126, 130, Figs 70, 71.
Habitat: Very abundant on *Caulerpa brownii*, on coralline algae and algae associated with *Hormosira banksii*, common on algae around kelp holdfasts (JLB).
Distribution: Dunedin to Leigh.

Photis sp. Barnard, 1972: 131, Figs 67 h-k.
Habitat: Rare on *Caulerpa brownii* (JLB).
Distribution: Kaikoura.

Family Ischyroceridae

Ischyrocerus longimanus Haswell, 1880b: 337, pl. 22, Fig. 7; Barnard, 1972: 133, 135, Fig. 73.
Habitat: Common on algae associated with kelp holdfasts, on coralline algae and algae associated with *Hormosira banksii* (JLB), common on *Caulerpa brownii* (GDF).
Distribution: Throughout New Zealand.

Jassa falcata (Montagu), 1808: 100, pl. 5, Figs 1, 2; Sexton and Reid, 1951: 29-91, pls 4-30; Barnard, 1972: 135.
Habitat: Rare on *Caulerpa brownii* (GDF), rare in the gill cavity of the Rock Lobster, *Jasus edwardsii* (KJG).
Distribution: Cosmopolitan.

Ventojassa frequens (Chilton), 1883: 85, pl. 3, Fig. 2; Barnard, 1972: 135, 137, Figs 74, 75.
Habitat: Uncommon on algae associated with kelp holdfasts, rare on *Caulerpa brownii* (JLB).
Distribution: Dunedin to Leigh.

Family Leucothoidae

Leucothoe trailli Thomson, 1882: 234-235, pl. 18, Fig. 1; Barnard, 1972: 137-138, Fig. 76.
Habitat: Rare on algae in Morgan's Pool, tip of Seal Reef (JLB).
Distribution: Port Pegasus, Otago Harbour, Lyttelton Harbour, Kaikoura, Hauraki Gulf.

Family Liljeborgiidae

Liljeborgia akaroica Hurley, 1954d: 796, 798, Figs 160-180; Barnard, 1972: 138.
Habitat: Rare on *Caulerpa brownii* (JLB).
Distribution: Akaroa, Kaikoura.

Family Lysianassidae

Parawaldeckia spp.
Habitat: Uncommon on *Caulerpa brownii*, coralline algae and algae associated with kelp holdfasts and *Hormosira banksii* (JLB).
Distribution: Throughout New Zealand.

Family Nihotungidae

Nihotunga noa Barnard, 1972: 142-143, Figs 77,78.
Habitat: Common on *Caulerpa brownii*, rare on coralline algae and algae associated with *Hormosira banksii* (JLB).
Distribution: Dunedin, Kaikoura.

Family Phliantidae

Iphinotus typicus (Thomson), 1882: 237-238, pl. 18, Fig. 4; Barnard, 1972: 193-194, Figs 67 n, 107-109.
Habitat: Rare on *Caulerpa brownii* (JLB).
Distribution: Lyttelton Harbour, Kaikoura, Wellington, Gisborne, Whangaparaoa Peninsula, Auckland Islands.

Family Phoxocephalidae

Paraphoxus waipiro Barnard, 1972: 143, 145, Figs 79, 80.
Habitat: Uncommon on *Caulerpa brownii*, rare on coralline algae and algae associated with *Hormosira banksii* (JLB).
Distribution: Dunedin, Kaikoura, Wellington, Gisborne, Whangaparaoa Peninsula, Leigh, Tapeka Point.

Family Podoceridae

Podocerus karu Barnard, 1972: 146, 150, Figs 81 a-k, 83k, 84 j-l.
Habitat: Uncommon on *Caulerpa brownii*, rare on coralline algae and algae associated with *Hormosira banksii* (JLB).
Distribution: Dunedin, Kaikoura, Wellington, Whangaparaoa Peninsula, Leigh.

Podocerus manawatu Barnard, 1972: 150, 152, Figs 81 l, 82-84.
Habitat: Rare on coralline algae and algae associated with kelp holdfasts and *Hormosira banksii* (JLB).
Distribution: Dunedin, Kaikoura, Wellington, Gisborne, Whangaparaoa Peninsula, Leigh.

Family Sebidae

Seba typica (Chilton), 1884: 257-258, pl. 18, Fig. 1; Barnard, 1972: 154-155, Figs 87 g-k.
Habitat: Rare on *Caulerpa brownii* (JLB).
Distribution: Lyttelton, Kaikoura, Wellington, Whangaparaoa Peninsula, Leigh, Tapeka Point.

Family Stegocephalidae

Tetradeion crassum (Chilton), 1883: 80-81, pl. 3, Fig. 1; Hurley, 1955: 197, 199, Figs 1-21; Barnard, 1972: 155, Fig. 87 a-f.
Habitat: Uncommon on *Caulerpa brownii*, rare on coralline algae and algae associated with *Hormosira banksii* (JLB).
Distribution: Throughout New Zealand.

Family Stenothoidae

**Probolisca ovata* (Stebbing), 1888: 764-767, pl. 44; Barnard, 1972: 155, Figs 89 f-j.
Habitat: Uncommon at Wairepo Flats on *Cystophora retroflexa* and at St Kilda Rocks on red algae from the lower littoral to 8 m (GDF).
Distribution: Dunedin, Kaikoura, Wellington, Campbell Island.

Raumahara rongo Barnard, 1972: 160, 162, Figs 91, 92.
Habitat: Common on *Caulerpa brownii*, rare on coralline algae and algae associated with *Hormosira banksii* (JLB).
Distribution: Kaikoura, Gisborne, Whangaparaoa Peninsula, Leigh.

Stenothoe moe Barnard, 1972: 157-158; Figs 88, 89, a-e.
Habitat: Common on *Caulerpa brownii*; uncommon on coralline algae and algae associated with kelp holdfasts and *Hormosira banksii*, (JLB).
Distribution: Dunedin, Kaikoura, Wellington, Gisborne, Whangaparaoa Peninsula, Leigh.

Family Talitridae

Allorchestes novizealandiae Dana, 1852: 207; Hurley, 1957a: 927, 929-931, Figs 147-169; Barnard, 1972: 167.
Habitat: Sublittoral algae.
Distribution: Throughout New Zealand.

Hyale grenfelli Chilton, 1916: 362-366, Figs 1-5; Hurley, 1957a: 919, 921-922, Figs 91-117; Barnard, 1972: 167.
Habitat: Common on *Caulerpa brownii*, uncommon on coralline algae and algae associated with *Hormosira banksii* (JLB).
Distribution: Kaikoura, Wellington, Mokohinau Island, Leigh.

Hyale maroubrae Stebbing, 1899: 405-406, pl. 32c; Hurley, 1957a: 913-914, 916, Figs 51-71; Barnard, 1972: 168.
Habitat: Common on intertidal rocks covered with coralline algae, *Hormosira banksii* and associated algae (JLB).
Distribution: Lyttelton, Kaikoura, Wellington.

Hyale media (Dana), 1852: pl. 61, Fig. 4; Hurley, 1957a: 916, 918-919, Figs 72-90; Barnard, 1972: 168.
Habitat: Rocky shores.
Distribution: Dunedin to Auckland.

Hyale rubra (Thomson), 1879a: 236, pl. 10B, Fig. 3; Hurley, 1957a: 910, 912-913, Figs 30-50; Barnard, 1972: 168.
Habitat: Very abundant on coralline algae and algae associated with *Hormosira banksii*, very abundant in algae growing around kelp holdfasts, uncommon on *Caulerpa brownii* (JLB).
Distribution: Shallow marine waters of New Zealand.

Orchestia chiliensis Milne-Edwards, 1840: 18; Hurley, 1957b: 157, 159-160, Figs 24-51.
Habitat: Very abundant in the supralittoral zone under stones, driftwood, and rotting seaweed from Gooch's Beach and Armer's Beach around the peninsula to South Bay (JKL).
Distribution: New Zealand coasts, Kapiti Island, Chatham Islands.

Talorchestia cookii Filhol, 1885: 459-460, pl. 53, Fig. 4; Hurley, 1956: 365, 367, 369, Figs 26-48.
Habitat: Uncommon on beach just north of Kahutara River, burrowing in supralittoral sand (JKL).
Distribution: Shingle beaches of South Island and Stewart Island, New Zealand.

Talorchestia quoyana (Milne-Edwards), 1840: 15, 19; Hurley, 1956: 361, 363, Figs 1-25.
Habitat: Common at Armer's Beach and Gooch's Beach burrowing in fine supralittoral sand, usually under decaying seaweed (JKL).
Distribution: Throughout New Zealand.

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